



PHOEBE

PREDICTIVE APPROACHES FOR SAFER URBAN ENVIRONMENTS

The EU-funded *Predictive Approaches for Safer Urban Environment consortium* (known as PHOEBE) brings together the inter-disciplinary power of traffic simulation, road safety assessment, human behaviour, mode shift and induced demand modelling and mobility data into a harmonised, prospective assessment framework for road safety.

The PHOEBE framework combines research, data and innovative tools and models to simulate and forecast the safety impact of disruptive changes, transitions or scenarios across urban transport networks, with a particular focus on vulnerable road users' safety. The 3.5-year-long PHOEBE project will apply and refine the framework in real-world scenarios across three pilot cities, Athens (GR), Valencia (ES) and West Midlands (UK).

The challenge

Urban traffic systems are increasingly dynamic. They are regularly 'disrupted' by new means of transport, new infrastructure, new technologies, and regulatory and behavioural changes. This presents challenges for transport managers in planning for these changes, as well as in achieving the ambitious EU-target of zero road deaths and serious injuries by 2050.

How **PHOEBE** solves these challenges?

PHOEBE will create solutions that can predict and visualise various traffic scenarios to support urban stakeholders, helping mobility planners, designers and managers understand the impacts of changes from the individual level up to the network-wide level. The PHOEBE framework will be available to other European cities, which can use as a blueprint to understand and evaluate the long-term safety, mode choice and socio-economic impacts of changes before they are made.



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Discover the pilot cities!

The three pilot cities of Athens (GR), Valencia (ES) and West Midlands (UK) will test different urban mobility scenarios with a wide range of road safety challenges from mixed traffic scenarios to intersections between roads and cycle lanes.

ATHENS

- 3.5 million people in the Attica Metropolitan Area
- One of the most important hub for tourism, transport and economic activity in the Eastern Mediterranean.
- Significant congestion due to high number of trips by passenger cars or motorcycles



ROAD SAFETY SITUATION

- 30.3 urban road fatalities per 1 million in Greece in 2020 or around 320 fatalities overall.
- The city administration aims to set up bicycle roads within the existing road network (mixed traffic, bike/bus lanes).
- ‘Soft engineering’ measures, such as low-emission zones or congestion charging, are other potential solutions.

PILOT SCOPE

The focus is on the road safety of vulnerable road users and their travel patterns. Furthermore, an analysis will place critical emphasis on KPIs, such as speed measurements and modal share of pedestrians, cyclists and similar modes, such as e-scooters. Scenarios will also be created for different times of the day (day & night) and during peak or off-peak hours. Potential future infrastructure interventions will be assessed.



- Third-largest city in Spain with 800.00 inhabitants.
- Important tourist destination (2022 European Capital of Smart Tourism).
- Pedestrian-friendly city (48% of trips are done by foot) and the usage of micro-mobility is growing.

VALENCIA

ROAD SAFETY SITUATION

- 8.3 urban road fatalities per 1 million inhabitants in Spain in 2020 or around 400 overall.
- 400-500 accidents involving cyclists happen in Valencia on an annual base.
- Investments in (separate) cycling infrastructure are made and additional traffic calming measures (speed reductions) are planned.

PILOT SCOPE

Scenario tests are planned for initiatives focusing on bicycling infrastructure upgrades and speed limit reductions. Such tests aim to better understand the impact of these initiatives on road user behaviour, particularly micro-mobility usage. Scenarios for several critical intersections and at ten bike lane segments across different road and area types are laid out.

WEST MIDLANDS

- Main city of the region is Birmingham with around 3 million inhabitants in the metropolitan area.
- Dense local tram- and train-network is used for more than 60% of the trips.
- Majority of the remaining intra-region trips are done by passenger car.



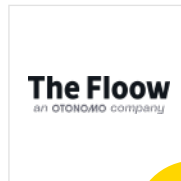
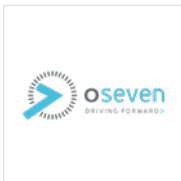
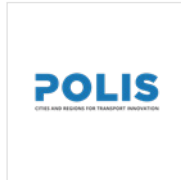
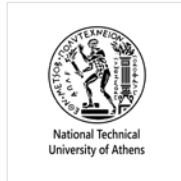
ROAD SAFETY SITUATION

- 3.8 urban road fatalities by 1 million inhabitants in the UK in 2020, which accounts to around 240 fatal accidents nation-wide.
- West Midland region's road safety strategy aims to reduce casualties by 40% by 2028.
- Baseline data for the strategy shows that one pedestrian is killed or seriously injured every day in the region and cyclists.

PILOT SCOPE

The aim is to reallocate road space to cycling and e-scooter use and enhancing road safety by reducing the average speed and to provide sustainable transport options to encourage a modal shift. Tests will identify the impact of these initiatives on road risk levels, user behaviour, and mode choice safety outcomes in the urban environment. The scenarios will test the effectiveness of infrastructure enhancements for cyclists and e-scooters users.

PROJECT PARTNERS



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